1154-43-1988 **Anna C Aboud***, aaboud@westmont.edu. *A Dualized Kaczmarz Algorithm.*

Because of its low complexity and computational efficiency, the Kaczmarz algorithm is particularly well suited to solve large linear systems, leading to many applications in the realm of data science. In the case of an inconsistent system, current variations of the algorithm will converge to a least squares solution. There are situations, however, where it is more desirable to minimize the ℓ^1 norm, pursuing a least absolute deviations solution. To address this need, we develop a dualized version of the algorithm within a Banach space setting. We will explore some of the difficulties encountered when transferring the algorithm from a Hilbert space to a Banach space, and will present necessary and sufficient conditions for certain forms of convergence. (Received September 17, 2019)